

BUSINESS EVALUATION

MENTUM SERVICE CORPORATION

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Planning Services for Management

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BUSINESS EVALUATION

MOMENTUM SERVICE CORPORATION

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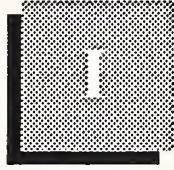
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Purpose of the Study

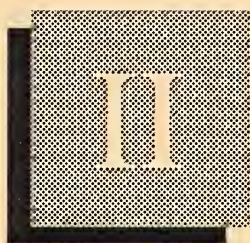




Purpose of the Study

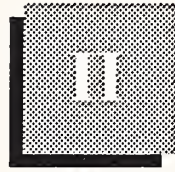
Investors in Decision Industries Corporation and Momentum Technologies, Inc. require financial support from the Bank of Boston for a proposed merger of the customer service (maintenance) components of the two companies. The Bank of Boston requires a business value assessment and a “due diligence” investigation of the two service components from an uninvolved, expert third party.

This report provides the results of the business value assessment and the “due diligence” investigation, a description of the methodology used, and the results of the on-site reviews, customer interviews, and the analysis of past transactions.



Methodology





Methodology

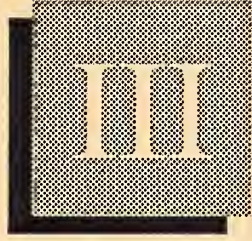
The methodology used consisted of the following six major activities:

1. For the industry as a whole, by reference to past transactions, comparable norms were established for similar business entities in terms of revenue multipliers. Known mitigating factors were noted for each transaction.
2. Twelve randomly selected customers were interviewed to determine if there was any suggestion of a widespread problem or dissatisfaction among the client base.
3. A visit was made and local personnel were interviewed at a Chicago District/Branch office.
4. Six key executives of Momentum Service Corporation were interviewed to determine the tenor or management qualifications, attitudes, plans, organization, and measurements.
5. Information was gathered on the key areas identified in Table 1. This information was analyzed, and concerns were identified and followed up with additional questions and analysis.
6. A written summation of findings (contained herein) was prepared, and a recommended valuation related to comparables with adjustments based on explicit factors was derived from the study.

TABLE 1

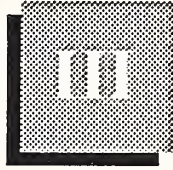
INFORMATION CATEGORIES ANALYZED

1. Income and expense by year for two years (major line items)
2. Income and expense by month (Jan. 1987-Feb. 1988)
3. Parts inventory/month for two years
4. Parts inventory book vs. physical for two years
5. Description of parts distribution network
6. Description of key parts availability issues with suppliers
7. Parts inventory write-off for obsolescence for two years
8. Attrition Rates (two years)
 - Customers (# contracts, total value)
 - Customer Engineers (two years)
 - Managers (two years)
9. Accounts payable/mo. for two years
10. Accounts receivable/mo. for two years
11. Bad debt write-off per month for two years
12. Terms and value of each outstanding employment contract or obligation
13. Office space lease commitments
14. Legal actions pending (a description of each)
15. Product inventory being serviced trends (i.e., by product type) for two years
16. Operating plan projections
17. Description of organization and location of major branches
18. Measurement/motivational system description
19. Marketing plans and organization
20. Description of C.E. dispatching approach and capability
21. Description of technical support structure
22. Description of any existing support contracts with manufacturers and estimated dollar value
23. Customer satisfaction trends for two years



Executive Overview





Executive Overview

This report provides the results of a “due diligence” investigation and a business value assessment of Momentum Service Corporation.

The “due diligence” investigation and the business value assessment were conducted primarily by INPUT’s manager of Customer Service Programs, Henry W. Stigler. Mr. Stigler recently retired from IBM, where he had 39 years of experience as an executive in all aspects of customer service.

Mr. Stigler visited a local district/branch office in the Chicago area, interviewed the key executives of Momentum Service Corporation, analyzed the key information shown in Table 1, and prepared a summary of key IBM actions that have and will impact this company.

In addition, 12 customers were contacted to determine if any widespread problem existed, and a study was made of past acquisitions to determine if a pattern exists.

Momentum Service Corporation has been in business about two years. It has enjoyed very high profit margins because about 90% of its business has been servicing other vendors’ products that it has obtained the exclusive right to service. In other words, it has the “captive market” on these products and can therefore command a high price for service.

Unfortunately, this part of the business is declining rapidly primarily due to the aging technology of these products. Customers are moving to other vendors’ products with better overall function and cost.

In response to this downturn, Momentum Service has recently staffed up its marketing and sales effort to enter the third-party maintenance market of other vendors’ products, primarily IBM’s. It has had limited success in this effort to date, primarily because of a late start in the sales effort and because of stiff price competition.

It is also actively pursuing acquisitions in order to build up its revenue and profit base.

Beginning in late 1986 and continuing to the present, IBM has made a series of policy changes and announced new discount offerings for service that have had a dramatic impact on the third-party maintenance companies and on other hardware vendors. In essence, IBM has lowered the total cost of ownership for its products and in so doing has effectively lowered the profit potential of maintenance for IBM as well as IBM's hardware and maintenance competitors.

Momentum Service has *not* reacted to IBM's action by offering a similar term contract. In fact, in some cases, Momentum's prices are higher than IBM's for less-complete service. Typically, third-party maintenance companies must offer equal service at 15% to 20% less than IBM does to get the business.

INPUT believes that the impact of IBM's actions will result in lower prices for service on basically all computer products. This means that margins will be lower than in the past history.

Also, as Momentum Service continues to move to the service of IBM products, Momentum's parts inventories will continue to increase at a rapid rate to support these new products.

In order to forecast future earnings and cash flow, a multiple linear regression analysis was first performed to establish a revenue forecast model.

The captive market revenue history provided a very high r^2 factor (i.e., .98), which provides a very high confidence that this portion of revenue can be predicted. The third-party revenue factor was much lower, and therefore the confidence in it as a forecast tool is not as great.

On the basis of information gathered, two cases were forecast, as follows:

Case I

Case I assumes that Momentum management will announce a term offering that will be competitive in price and will increase third-party marketing effort in order to keep total revenue flat. It therefore uses different cost factors as a percent of revenue, and it reflects the fact that parts inventories will have to be increased to support a different set of products.

Case II

Case II uses the regression estimating formula for both the captive market and the Third-party market revenue. The overall trend is drastically down, and the model assumes that Momentum management will gener-

ally be able to keep most expenses in line with revenue decrease. The overall net income before tax drops from 12.3% to 4.4% of revenue over a six-year period.

Case II results in a higher cash flow than Case I. It represents a “fire sale strategy,” where the company is milking a declining business, and therefore the residual value at the end is much lower than Case I.

In order to determine business value, three approaches were examined, as follows:

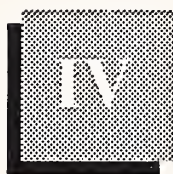
1. Other acquisitions during the past few years were reviewed to determine if a pattern existed. No pattern was found, but in one case a premium was paid to reacquire a dedicated service company to support the sales of hardware products. It was determined that this company was not similar to Momentum Service, so this approach was not used for determining value.
2. The value in terms of stock market price/earning ratio was also reviewed. Of the top twenty third-party maintenance companies, only one, Interlogic Trace, is publicly traded. It is very similar to Momentum Service, and therefore it was used as a base for determining value.
3. A six-year cash flow and present value analysis were prepared for Case I and Case II. Residual value was then determined using the Interlogic Trace data and then discounted to the present value. The present value plus the residual value were then added to obtain a value.

After considering all the facts available, and based on INPUT’s business judgement, the business value is \$50,000,000. Refer to Chapter VIII for details.



Analysis of Past Transactions





Analysis of Past Transactions

A thorough review was made of industry periodicals and newsletters to identify acquisitions in the computer service field during the past three years. When financial data was not published in these media, copies of the annual reports were obtained and/or phone calls were made to the companies involved. In many cases, this financial information was considered proprietary and therefore was not revealed. Table 2 provides a summary of the key acquisitions for which data is available.

The purpose of this analysis was to determine if an established service revenue to purchase price formula exists in prior transactions. The information gathered does not support the existence of such a formula.

For example, in two of the acquisitions, a multiplier between 0.5 and 1.0 times the annual service revenue was paid. In three cases, multipliers of between 1.0 and 2.0 were paid, and in two cases, multipliers of between 2.0 and 3.0 were paid.

It is apparent that the greatest emphasis was placed on the real or perceived benefits that the prospective acquisition candidate offered. In this effort, service companies attempt to increase critical mass and optimize economies of scale, thus effectively improving productivity. They also focus on the opportunity to continue to maintain or improve profit and cash flow. Recent major changes in service pricing and offerings by IBM have made it very difficult for both third-party maintenance companies and the service functions of computer manufacturers to maintain or to improve their profit margins. These actions are discussed in Chapter V.

TABLE 2

SERVICE ACQUISITIONS

	Company	Est. Service Revenue	Price	Date
1.	MAI Basic Four			
2.	Service Business (Sorbus)	\$77M	**\$105.6M(cash)	1/88
1.	Bell South			
2.	Data Serve	\$37M	\$97M (stock)	1/87
1.	Telos			
2.	DMA, Inc.	\$3M	\$2.6M (stock)	9/87
1.	Dow Jones, Inc.			
2.	Zentec	\$3M	\$3.8M (cash)	1/87
1.	Decision Data Service			
2.	John Iverson	\$390K	\$596K	5/87
1.	Decision Data Service			
2.	Jones Business Systems	\$1.9M*	\$995K	3/86
1.	Bell Atlantic			
2.	Sorbus	\$150M	\$235M	1/85

*Includes other than Service Revenue

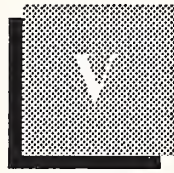
** The total price paid was \$146 million, but the purchase included the Canadian hardware and software sales function of MAI Canada, Inc. The estimated share of the purchase price for the service business is \$105.6 million.

NOTE: In each, Case 1. is the acquiring company.



Recent IBM Actions and the Projected Impact





Recent IBM Actions and the Projected Impact

In October, 1986, IBM announced a new service offering called the Corporate Service Amendment (CSA). CSA offered a significant discount to customers that practiced good system management disciplines and would agree to sign up for a three-year contract. An initialization fee and an on-site IBM assessment is required to determine eligibility.

In March, 1987, IBM enhanced CSA by adding an additional 5% discount for signing up for five years, by adding 21 shifts of coverage at no additional charge, and by reducing the withdrawal penalties. Five-year discounts range from 19% to 45%, depending on the product type involved. All IBM product types are covered except copiers and typewriters.

The large initialization fee (\$3,500) plus the stringent assessment (i.e., procedures review) by IBM resulted in only the very large customer being eligible for this offering.

Since most Momentum Service customers are small to medium in size, they were not impacted and therefore Momentum Service was not impacted.

In September, 1987, however, IBM announced the Mid-Range Systems Amendment (MRSA) to cover the Systems 3X, 4300, and 9370. MRSA has no initialization fee and no on-site IBM assessment. The customer simply certifies that it is using system management procedures. MRSA is available for terms of three or five years, and the five-year discounts vary from 17% to 30%.

Other IBM actions during 1987 and early 1988 include the following:

1. Marketing support was moved to the Marketing Divisions, and all sales personnel were assigned incentives for selling service. Mandatory loss reviews were instituted for large service revenue losses.

Marketing Blitz days were scheduled in each area to focus on the Mid-Range Service Amendment opportunity.

2. Very low maintenance prices were announced for the IBM PS-2 and new workstations.
3. IBM enhanced service response time by announcing a four-hour response objective for PCs, workstations, and midrange systems.
4. IBM enhanced OEM product support by announcing that it would accept maintenance responsibility for any OEM product attached to an IBM personal computer as long as the OEM product met Underwriters Laboratory safety standards. IBM has also started special bidding OEM maintenance and support as part of large system integration contracts. A policy change was implemented in January, 1987 to stop charging for problem determination when the problem is found to be OEM equipment.
5. Twenty-one shifts of coverage were made standard in the base M/A at no additional charge.
6. Support for third-party maintenance and customers not under contract was curtailed by:
 - a. Limiting per-call service to 7:00 a.m. to 6:00 p.m., Monday through Friday.
 - b. Placing a two-hour minimum charge on every call.
 - c. Closing over-the-counter parts sales from branch office stock-rooms. Sales of parts are now made only from 21 geographic parts centers or from two national distribution centers.
 - d. Standards for acceptance of machines on IBM M/A after third-party work were increased.
7. The National Service Division of IBM instituted revenue attainment as a key measurement and also implemented a midrange customer appreciation program, which included scheduled visits on each customer and a new system-level preventive maintenance program.

The key items above are a sharp focus on price, quality, additional service, and partnership with the customers. The overall goals appear to be market share increase and account control.

These actions have lowered the overall cost of product ownership and have therefore impacted other hardware vendors as well as third-party maintainers. For example, the dramatically low base prices coupled with

CSA and/or MRSA discounts make the IBM product much more competitive from a price standpoint. This will force the hardware competitors to lower prices or accept lower product sales.

Third-party maintainers will have to decrease price in order to remain competitive. They will experience increased costs if they attempt to match IBM's 21 shifts of coverage. They will also have increased costs to procure and stock parts.

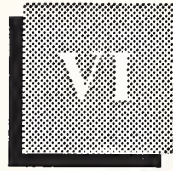
The overall outlook for IBM, the competitive hardware vendor, and the third-party maintainer is for reduced profit margins for service as a result of IBM's actions.

Momentum Service will be immediately impacted by the IBM actions in terms of reduced volumes and/or reduced profits on the maintenance of IBM products. The company will be impacted later in terms of reduced volumes and/or reduced profits on the maintenance of other third-party equipment.



Results of Customer Interviews





Results of Customer Interviews

These are the compiled results of a 6-question survey of 12 Momentum Service Corp. users as part of a recent MSC business evaluation study conducted by INPUT. These customers were randomly picked from a group of 2,000 customers, all of which were under a Momentum maintenance contract in late 1987. A copy of the questionnaire is in Appendix A.

Respondent Profile (12 respondents)

	Products Installed	Under Maintenance
Quantel only	4	2
Quantel & IBM PC	2	2 (all)
Mohawk only	2	2
Mohawk & IBM PC	2	1 (Mohawk only)
Mohawk & IBM PC & System 34	2	2 (all)

Of significant importance, 4 companies of the 12 in the sample did not have maintenance contracts at the time of the survey. Three of these had moved to Time and Material service and one had apparently moved to another vendor. In other words, 25% of the sample had cancelled their maintenance contracts in the past few months, yet they still had the equipment installed.

Length of time as a MSC Customer

Less than 1 year	2
1 - 3 years	3
More than 3 years	7

Seven of the 12 in the sample have been MSC customers for more than three years. Three have been on account for one to three years and two for less than one year.

Respondents were asked to give a rating of their satisfaction level regarding various categories of service: (scale 1 - 10; 1 = low, 10 = high)

The Mean of Each Category

A.	Response time	8.2
B.	C.E. attitude (customer engineer, field engineer)	8.9
C.	Local service management	8.7
D.	C.E. ability to resolve problems quickly	8.6
E.	Availability of spare parts	7.7
F.	Overall satisfaction with serviCE	8.4

Generally, all ratings were close to 8 mean or above for this vendor. Clearly, clients are satisfied with the C.E. attitude giving this category an 8.9. Second in standing at 8.7 was local service management. The C.E.'s ability to resolve problems quickly was rated 8.6. Respondents rated their overall satisfaction with service at 8.4. The response time mean is given a rate at 8.0. Finally, availability of spare parts was rated lowest at 7.7.

Respondents' Comments:

Respondents were asked what service area, if any, they would like added to or improved would increase their satisfaction with MSC.

(12 Respondents)

- 4 clients gave no comment.
- 3 respondents of the 8 remaining mentioned dissatisfaction with parts availability.

- 1 mentioned of good response time and on-site service.
- 1 was generally satisfied.
- 1 mentioned a hardware problem, said MSC was not as reliable as IBM, and is changing to IBM.
- 1 mentioned poor response time and a bad attitude.
- 1 wants Momentum to arrange for new phone lines faster as the customer installs more workstations.

Plans to cancel or reduce the amount of equipment being serviced by MSC were given by 2 of the 12 respondents. One company mentioned it was switching to IBM for more reliability and as a cost factor. The other company stated the equipment was being phased out or traded in (IBM PC). This is significant in view of the fact that 4 of the original 12 in the sample had already cancelled Momentum service prior to the survey.

The final question was asked of the customer only if it currently did not have a maintenance contract for a product. Four of the 12 in the sample were asked this question.

One respondent that has a Quantel contract stated the service was too expensive and it is cheaper to use "time and materials" only. Another client that has Mohawk and IBM PC installed with a contract under the Mohawk product only stated it would consider expanding its service. The third customer has Quantel products installed and a "time and material" agreement currently and stated it would consider expanding service. Finally, the fourth respondent has both Quantel and IBM PC installed with both products under "time and material" agreement. Again, this company stated it would consider expanding its MSC maintenance in both product areas.

Summary

The overall level of customer satisfaction appears to be satisfactory. Customers have apparently cancelled or plan to cancel based primarily on the price increase announced in the third quarter of 1987 and on the new alternative offering from IBM.

Customers appear to be willing to consider expanding the amount of service they get under contract from Momentum Service.

Statistical data on the responses to the six questions are as follows:

Response Time

Rate	Number of Companies
10.0	2
9.0	3
8.5	1
8.0	4
7.0	1
4.0	1

Response time Mean = 8.2
 Range = 4 - 10
 Median = 8.5

C.E. Attitude

Rate	Number of Companies
10.0	4
9.0	4
8.0	3
7.0	1

C.E. Attitude Mean = 8.9
 Range = 7 - 10
 Median = 9

Local Service. Management

Rate	Number of Companies
10.0	3
9.0	4
8.0	2
7.0	2
N/A	1

Local Service Management Mean = 8.7
 Range = 7 - 10
 Median = 9

N/A = One respondent would not reply.

C.E. Ability to Resolve Problems

Rate	Number of Companies
10.0	2
9.0	5
8.0	3
7.0	2
C.E. Resolve Problems Mean	= 8.6
Range	= 7 - 10
Median	= 9

Availability of Spare Parts

Rate	Number of Companies
9.0	4
8.0	3
7.0	3
6.0	1
5.0	1
Availability of Spare Parts Mean	= 7.7
Range	= 5 - 9
Median	= 8

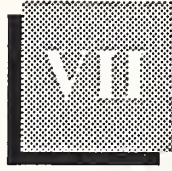
Overall Customer Satisfaction

Rate	Number of Companies
10.0	2
9.0	3
8.5	1
8.0	3
7.0	3
Overall Customer Satisfaction Mean	= 8.4
Range	= 10
Median	= 8.5



Results of Records Reviews, and On-Site Interviews





Results of Records Reviews, and On-Site Interviews

A

Organization and Management Structure

Momentum Service employs about 770 people, 500 of which are in the field organization. It provides service to 140 cities from 27 branch offices which report to 12 districts. The districts report to two geographic regions which report to the Vice President of Field Operations.

Each branch is operated on the basis of an independent profit center with key measurements in the following areas:

- Expense/revenue
- Sales quota
- Customer satisfaction
- Incident report accuracy/timeliness
- Expenses/employee
- Parts inventory/revenue
- Revenue/customer engineer
- Response time

The field organization is supported by staff functions in the following major areas:

- Centralized dispatch
- Centralized parts logistics
- Centralized accounts receivable
- Centralized technical support

The field sales effort is performed primarily by the customer engineers and the field managers who are incented to sell service through the CLIP program. CLIP pays a commission for selling service. The branch office sales effort is also supported by a full-time marketing representative located in each geographic district and by the headquarters marketing organization. These marketing representatives have been in place only a

short time, and it is planned that they will focus only on large-size prospects for service.

The field sales effort is supported at headquarters by a staff under the Vice President of Marketing and Sales, which focuses on business development, contract administration, pricing, OEM sales/support, and the management of a new support center contract for a large customer (i.e., Nationwide Insurance).

Other major headquarters functions include the following:

- Vice President Logistics
- Vice President Engineering & Technical Support
- Vice President Finance & Administration

Parts distribution centers are located in Herkimer, New York and Fremont, California. The engineering and technical support organization is located in Fremont, California. The remainder of the headquarters operation is located in Morris Plains, New Jersey.

In the past, Momentum Service has enjoyed a relatively high profit margin by following a strategy of obtaining exclusive rights to service other vendors' products in return for a royalty payment to the vendor. The revenue from this source is declining at a rapid rate, however, and the focus for the future is on the maintenance of IBM and IBM-compatible products in the areas of personal computers, workstations, and system 3X products. Success in this new area has been minimum up to the present time.

B

Personnel

No employee opinion surveys have been taken at Momentum Service, so it is difficult to get an exact reading on this subject. Data is available from six customer satisfaction surveys that rate, on a scale of 1 to 10, the attitude of the customer engineers and the managers. The customer engineers' attitude averages 8.72, and the managers' attitude averages 8.53. These are satisfactory scores which certainly do not indicate a personnel problem.

Momentum Service was formed in May, 1986. Attrition since that time has been as follows:

- Customer engineers	88
- Managers	6
- Administrative	19

The major reason for the high attrition rate was a large layoff in February 1987 of 63 people. This was due to a falloff of traditional business volumes. If you subtract the layoff, the remaining attrition rate looks very reasonable.

C**Facilities**

Visits to a Momentum district/branch office in Chicago and to the headquarters facility in Morris Plains, New Jersey revealed a normal office environment with locations in suburban areas. The field offices are used for parts stocking, parts shipping and receiving, technical support, bench repair of small units, and management.

D**Marketing/Sales**

Marketing and Sales at Momentum Service are still in the process of getting their act together. In the past, due to the exclusive authorized service contracts with Quantel and Mohawk, they had a captive market which required little sales emphasis.

As a result of hardware competition and obsolescence of products, product-installed inventories are dropping fast, causing Momentum to look for other sources of revenue and profit. Recently Momentum has responded by raising prices on the captive market and by focusing on the following with programs and resources:

1. National Sales Program

A director and 11 geographically disbursed salespeople were put in place to focus on large enterprises with over \$100,000/yr of service revenue opportunity in the third party maintenance area.

2. OEM Sales

A two-person team has been assigned to negotiate contracts with product vendors to support and maintain their products. If possible, these contracts will provide Momentum with the exclusive right to service.

3. Acquisitions

One person has been assigned to actively pursue the acquisition of other service companies. Several possibilities are pending at the present time. Some of these may result as settlements to legal action brought by Momentum to protect its exclusive right to service certain products.

4. CLIP Program

A program was implemented that provides financial incentives to customer engineers and field managers to develop leads and close business within the existing end-user customer base.

The marketing function of Momentum is also responsible for the pricing. The pricing level is primarily a function of competition. There is no product profitability information available; therefore there is a risk of setting prices so you will lose money.

The captive market customers that are not replacing their equipment are beginning to shift from contracts to time and material to save money.

The current prices for the IBM Personal Computer and the System 3X maintenance are not competitive, and as a result it will be difficult, if not impossible, to meet the revenue forecasts for these products. Table 3 provides a pricing comparison for the IBM Personal Computer and the IBM System 36.

TABLE 3

MSC PRICING ANALYSIS

PRODUCT	MSC	IBM BASE	IBM 3 YR	IBM 5 YR
IBM PERS. COMPUTER				
PC/XT 5160	\$17.50	\$26.00	\$20.28	\$18.98
PC/AT 5170	\$20.00	\$29.00	\$22.62	\$21.17
IBM SYS 36				
5360 B1A	\$207.38	\$237.00	\$208.56	\$196.71
5360 B2B	\$266.00	\$304.00	\$267.52	\$252.32

THE MSC PRICES ARE FOR A STANDARD CONTRACT WITH SERVICE FROM 8AM TO 8PM MONDAY THROUGH FRIDAY. THE RESPONSE TIME IS 4 HR AVERAGE.

THE IBM PRICES ARE ALL FOR 24-HR COVERAGE, SEVEN DAYS PER WEEK WITH A 4-HR AVERAGE RESPONSE TIME. THE 3-YR AND THE 5-YR CONTRACT CARRY NO TERMINATION CHARGE IF 3 MONTHS NOTICE IS GIVEN ON THE 3-YR CONTRACT AND IF 6 MONTHS NOTICE IS GIVEN ON THE 5-YR CONTRACT.

E

Competition

In some cases the prices are higher than IBM's. Usually third party maintenance firms must price 15% to 20% below IBM in order to win the business.

In the captive market, competition has been more of a irritant than a problem. It has remained small primarily due to Momentum's threatening or taking legal action to protect its exclusive right to service.

In the third-party maintenance market key competitors include IBM, as well as the other third-party maintenance competitors. Very little progress is being made in terms of rapid growth in this area.

F**Legal Actions
Pending**

The major legal actions under way at the present time have been instigated by Momentum Service against five small maintenance companies for theft of trade secrets and violation of Momentum's exclusive right to service certain products. Momentum's strategy is to attempt to settle these issues by acquiring the companies in lieu of prolonged litigation.

G**Parts Inventory**

Major parts depots are located in Herkimer, New York and Fremont, California. Since 90% of the current revenue is derived from the captive market, the major portion of the inventory is to support that market.

Interviews with field and headquarters management revealed that a problem existed with parts availability to support the third-party business area. Recent actions by IBM relative to parts sales have made the problem worse.

The net parts inventory as stated in the balance sheet has dropped from \$33.1 million in September, 1986 to a low of \$12.4 million in August, 1987. It has since increased to \$13.7 million in March, 1988 due to parts needed to support new products that are being serviced.

The methodology used for the reevaluation was to determine required usage for five years by part number and to scrap or value to zero all parts above that requirement. Momentum depreciates all repairable parts in inventory over a five year period. The reevaluation methodology and the depreciation procedure seem reasonable and conservative.

It should be noted, however, that since over 90% of Momentum's service revenue comes from older baseline products that are being phased out by existing customers and that have little if any market value, it is doubtful that you could sell the existing inventory for \$13.7 million. In other words, an alternate source of these parts is to purchase the equipment being discontinued and disassemble it.

H**Hardware
Maintenance Quality
Survey**

Momentum has conducted a quarterly mail survey of customers since the third quarter of 1986. On a scale of 1 to 10, the overall rating has shown gradual improvement to the present rating of 8.41.

Surveyed customers are also asked if they would be interested in other services from Momentum. For example, service on their IBM products, such as personal computers, workstations, and System 3X. The percent of customers interested has shown a steady decline since the first quarter of 1987 as follows:

1st Q 87	25.6%
2nd Q 87	21.4%
3rd Q 87	19.2%
4th Q 87	10.4%

The reason for this decline is not obvious, although you could tie the rapid decrease in late 1987 to the price increase in the 3rd quarter of 1987.

I

Contract Cancellation Analysis

Table 4 provides a recap by reason for the cancellation of contracts over \$1,000 per month. The period analyzed is from June, 1987 through March, 1988.

The key reason for cancellation is clearly that the equipment is being replaced or deinstalled. A recent price increase apparently caused some customers to move to time and material.

There was only one mention of a quality of service problem.

This analysis raises the question of how reasonable the revenue forecast is for the base (i. e., captive market) products. This forecast will be discussed in the assessment of the financial projections.

TABLE 4

MSC CONTRACT CANCELLATION ANALYSIS ON CONTRACTS OVER \$1,000/MO FY 88 THROUGH 3RD Q

	# CONTRACTS
QUANTEL	
EQUIPMENT REPLACED OR DEINSTALLED	29
CREDIT OR PAYMENT PROBLEM	6
TIME AND MATERIAL OPTION	5
COMPETITOR WITH LOWER PRICE	2
REASON UNKNOWN	1
MDS	
EQUIPMENT REPLACED OR DEINSTALLED	34
TIME AND MATERIAL	6
REASON UNKNOWN	5
TRIVEX	
EQUIPMENT REPLACED OR DEINSTALLED	10

J

Financial

Table 5 displays a summary of income and expense for Fiscal Year 1987, Fiscal Year 1988, and Calendar Year 1988. The fiscal year ends on June 30th.

TABLE 5

MSC INCOME AND EXPENSE \$ THOUSANDS			
	FISCAL 1987 ACTUAL	FISCAL 1988	CALENDAR 1988
REVENUES			
PARTS/REPAIRS	2,294	1,776	1,610
MAINTENANCE	66,293	61,297	62,189
TOTAL	68,587	63,073	63,799
DIRECT COSTS			
PARTS/REPAIRS	644	436	403
PARTS DEPRECIATION	3,035		
FIELD OPERATIONS	29,050		
ENG&TECH SUPPORT	1,869	1,811	1,746
LOGISTICS	8,246		
OTHER	284		
TOTAL DIRECT	43,128	39,552	39,512
GROSS MARGIN	25,459	23,521	24,287
PERCENT GROSS PROFIT	37.1	37.3	38.1
OPERATING EXPENSES			
QUANTEL ROYALTIES	4,502		
MARKETING/SALES	3,084		
COMM/ROYALTIES	99		
G AND A	2,855	2,622	2,642
TOTAL OPERATING EXP	10,540	10,037	10,512
GROSS OPERATING PROFIT	14,919	13,484	13,775
PERCENT PROFIT	21.8	21.4	21.6
OTHER EXPENSE			
MT INTANGIBLE AMORT	3,101	2,765	2,598
OTHER	26	(28)	(157)
TOTAL OTHER	3,127	2,737	2,441
INCOME/(LOSS) B TAX	11,792	10,747	11,334
PERCENT NET BEFORE TAX	17.2	17.0	17.8
NOTE: MDS ROYALTIES AND INTEREST EXPENSE ARE NOT INCLUDED.			

The net before-tax profit margin is 17% or higher, which is very good, but the revenue projection is based on a significant increase in third-party maintenance revenue to offset a declining base (i.e., "captive market") revenue.

Table 6 provides the actual history of revenue by major category and a projection of future revenue based on a multiple linear regression analysis of the historical data. The base revenue r^2 results were very high (i.e., .98); therefore there is a high confidence factor in this projection.

The projection of third-party maintenance revenue is based on a much lower r^2 factor, and therefore, INPUT has less confidence in this projection. The major problem with the third-party area is the lack of a service offering equal to competition at a competitive price.

A graph of the key variables in Table 6 is displayed in Graph I. the overall outlook is for a rapidly declining revenue unless some additional actions are taken to promote revenue growth.

On the basis of information gathered, two cases were forecast, as follows:

Case I

Case I assumes that Momentum management will announce a term offering that will be competitive in price and will increase third-party marketing effort in order to keep total revenue flat. It therefore uses different cost-to-revenue factors, and it reflects the fact that parts inventories will have to be increased to support a different set of products.

Case II

Case II uses the regression estimating formula for both the captive market and the third-party market revenue. The overall trend is drastically down, and the model assumes that Momentum management will generally be able to keep most direct expenses in line with revenue decreases.

Table 7 and Table 8 display the estimated spare parts purchases and estimated depreciation expense by year, through 1993.

Table 7 is for Case I and reflects an increased level of spare parts purchases to support the new third-party products being maintained.

Table 8 is for Case II, and it reflects the decreased need to purchase parts as the overall revenue declines.

The consolidated I&E forecasts for Case I and Case II are displayed in Tables 9 and 10 respectively. A net after-tax income is projected which is used in a cash flow and present value projection (Table 11 and Table 12).

The estimated present value of the cash flow in Case I is \$19,667,000, and in Case II it is \$26,343,000.

TABLE 6

MSC REVENUE TRENDS AND PROJECTIONS \$ THOUSANDS				
QUARTER	TOTAL	BASE	TPM	ACTUAL
1	18,093	16,469	349	
2	17,314	15,812	1,469	=
3	16,695	15,053	1,290	=
4	16,485	14,765	1,221	=
5	16,082	14,249	1,349	=
6	15,775	13,928	1,419	=
1987 CALENDAR YR TOTAL	65,037	57,995	5,279	=
7	15,587	13,529	1,594	=
8	14,975	12,916	1,769	FORECAST
9	14,574	12,438	1,901	=
10	14,174	11,960	2,033	=
1988 CALENDAR YR TOTAL	59,310	50,843	7,298	
11	13,774	11,481	2,165	=
12	13,373	11,003	2,297	=
13	12,973	10,525	2,429	=
14	12,573	10,046	2,561	=
1989 CALENDAR YR TOTAL	52,693	43,055	9,452	=
15	12,172	9,568	2,693	=
16	11,772	9,090	2,825	=
17	11,372	8,612	2,957	=
18	10,971	8,133	3,089	=
1990 CALENDAR YR TOTAL	46,287	35,403	11,563	
19	10,571	7,655	3,220	=
20	10,171	7,177	3,352	=
21	9,770	6,698	3,484	=
22	9,370	6,220	3,616	=
1991 CALENDAR YR TOTAL	39,882	27,750	13,674	=
23	8,970	5,742	3,748	=
24	8,569	5,264	3,880	=
25	8,169	4,785	4,012	=
26	7,769	4,307	4,144	=
1992 CALENDAR YR TOTAL	33,477	20,098	15,784	=
27	7,368	3,829	4,276	=
28	6,968	3,350	4,408	=
29	6,568	2,872	4,540	=
30	6,168	2,394	4,672	=
1993 CALENDAR YR TOTAL	27,072	12,445	17,895	=
31	5,767	1,916	4,804	=

GRAPH 1

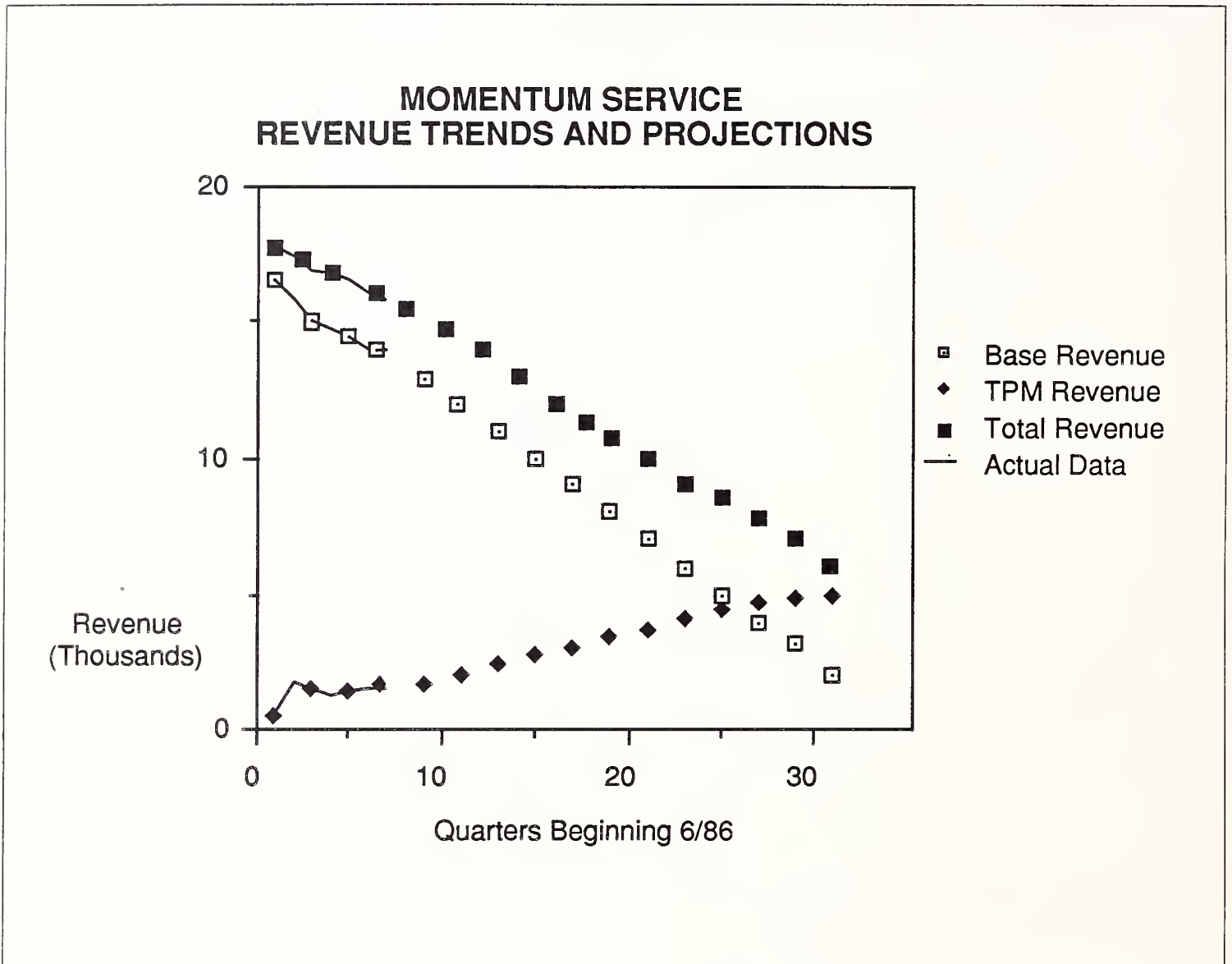


TABLE 7

**MSC PARTS DEPRECIATION ESTIMATE
CASE 1
\$ THOUSANDS**

	1988	1989	1990	1991	1992	1993
MAINT REVENUE	60,000	60,000	60,000	60,000	60,000	60,000
SPARES PURCHASE	3,960	5,400	6,000	6,300	6,300	6,000
PERCENT REVENUE	6.6	9.0	10.0	10.5	10.5	10.0
DEPRECIATION						
MAY 86 11.1M	2,220	2,220	2,220	1,665		
2ND H 86 2.75M	550	550	550	275		
1ST H 87 2.75M	550	550	550	550		
2ND H 87 1.98M	396	396	396	396	198	
J-A 88 1.32M	264	264	264	264	264	
M-D 88 2.64M	352	528	528	528	528	176
YR 1989		972	972	972	972	972
YR 1990			1,080	1,080	1,080	1,080
YR 1991				1,134	1,134	1,134
YR 1992					1,134	1,134
YR 1993						1,080
TOTAL DEPREC.	4,332	5,480	6,560	6,864	5,310	5,576

TABLE 8

MSC PARTS DEPRECIATION CASE 2 \$ THOUSANDS

	1988	1989	1990	1991	1992	1993
MAINT REVENUE	59,310	52,693	46,287	39,882	33,477	27,072
SPARES PURCHASE	3,960	4,374	3,842	3,310	2,779	2,247
PERCENT REVENUE	6.7	8.3	8.3	8.3	8.3	8.3
DEPRECIATION						
MAY 86 11.1M	2,220	2,220	2,220	1,665		
2ND H 86 2.75M	550	550	550	275		
1ST H 87 2.75M	550	550	550	550		
2ND H 87 1.98M	396	396	396	396	198	
J-A 88 1.32M	264	264	264	264	264	
M-D 88 2.64M	352	528	528	528	528	176
YR 1989		875	875	875	875	875
YR 1990			768	768	768	768
YR 1991				662	662	662
YR 1992					556	556
YR 1993						449
TOTAL DEPREC.	4,332	5,383	6,151	5,983	3,851	3,486

TABLE 9

MSC CONSOLIDATED I&E FORECAST CASE 1 \$ THOUSANDS						
	1988	1989	1990	1991	1992	1993
REVENUES						
PARTS/REPAIRS	1,610	1,430	1,263	1,088	913	738
BASE MAINTENANCE	50,843	43,055	35,403	27,750	20,098	12,445
TPM MAINTENANCE	9,157	16,945	24,597	32,250	39,902	47,555
TOTAL	61,610	61,430	61,263	61,088	60,913	60,738
DIRECT COSTS						
PARTS/REPAIR @ .26	419	372	328	283	237	192
PARTS DEPRECIATION	4,332	5,480	6,560	6,864	5,310	5,576
OTHER DIRECT BASE	29,743	25,187	20,711	16,234	11,757	7,280
PERCENT OTHER DIRECT BASE	58.5	58.5	58.5	58.5	58.5	58.5
OTHER DIRECT TPM	7,390	13,675	19,850	26,026	32,201	38,377
PERCENT OTHER DIRECT TPM	80.7	80.7	80.7	80.7	80.7	80.7
TOTAL DIRECT COSTS	41,883	44,714	47,449	49,406	49,506	51,425
GROSS MARGIN	19,727	16,716	13,814	11,682	11,407	9,313
PERCENT GROSS PROFIT	32.0	27.2	22.5	19.1	18.7	15.3
OPERATING EXPENSES						
QTL ROYALTIES 7.3%B	3,712	3,143	2,584	2,026	1,467	908
MKTG/G&A 9.4% T REV	5,791	5,774	5,759	5,742	5,726	5,709
TOTAL OPERATING EXP	9,503	8,917	8,343	7,768	7,193	6,618
OPERATING PERCENT REV	15.4	14.5	13.6	12.7	11.8	10.9
GROSS OPERATING PROFIT	10,224	7,799	5,471	3,914	4,214	2,695
PERCENT PROFIT	16.6	12.7	8.9	6.4	6.9	4.4
OTHER EXPENSE						
MT INTANGIBLE AMORT	2,820	2,820	2,820	1,840	0	
OTHER	(157)	0	0	0	0	0
TOTAL OTHER	2,663	2,820	2,820	1,840	0	0
INCOME/(LOSS) B TAX	7,561	4,979	2,651	2,074	4,214	2,695
PERCENT NET BEFORE TAX	12.3	8.1	4.3	3.4	6.9	4.4
ESTIMATED TAX 41%	3,100	2,041	1,087	850	1,728	1,105
NET AFTER TAX	4,461	2,938	1,564	1,223	2,486	1,590
NOTE: MDS ROYALTIES AND INTEREST EXPENSE ARE NOT INCLUDED.						

TABLE 10

**MSC
CONSOLIDATED I&E FORECAST
CASE 2
\$ THOUSANDS**

	1988	1989	1990	1991	1992	1993
REVENUES						
PARTS/REPAIRS	1,610	1,430	1,263	1,088	913	738
MAINTENANCE	59,310	52,693	46,287	39,882	33,477	27,072
TOTAL	60,920	54,123	47,550	40,970	34,390	27,810
DIRECT COSTS						
PARTS/REPAIR @ .26	419	372	328	283	237	192
PARTS DEPRECIATION	4,332	5,383	6,151	5,983	3,851	3,486
OTHER DIRECT	34,696	31,352	28,004	24,527	20,923	17,191
OTHER DIRECT PERCENT MAINT	58.5	59.5	60.5	61.5	62.5	63.5
TOTAL DIRECT COSTS	39,447	37,107	34,483	30,793	25,012	20,869
GROSS MARGIN	21,473	17,016	13,067	10,177	9,378	6,941
PERCENT GROSS PROFIT	35.2	31.4	27.5	24.8	27.3	25.0
OPERATING EXPENSES						
QUANTEL ROYALTIES						
MARKETING/SALES						
COMM/ROYALTIES						
G AND A						
TOTAL OPERATING EXP	9,686	8,606	7,560	6,514	5,468	4,422
OPERATING PERCENT REV	15.9	15.9	15.9	15.9	15.9	15.9
GROSS OPERATING PROFIT	11,787	8,410	5,507	3,662	3,910	2,520
PERCENT PROFIT	19.3	15.5	11.6	8.9	11.4	9.1
OTHER EXPENSE						
MT INTANGIBLE AMORT	2,820	2,820	2,820	1,840	0	
OTHER	(157)	0	0	0	0	0
TOTAL OTHER	2,663	2,820	2,820	1,840	0	0
INCOME/(LOSS) B TAX	9,124	5,590	2,687	1,822	3,910	2,520
PERCENT NET BEFORE TAX	15.0	10.3	5.6	4.4	11.4	9.1
ESTIMATED TAX 41%	3,741	2,292	1,101	747	1,603	1,033
NET AFTER TAX	5,383	3,298	1,585	1,075	2,307	1,487

NOTE: MDS ROYALTIES AND INTEREST EXPENSE ARE NOT INCLUDED.

TABLE 11

**MSC
PRESENT VALUE ANALYSIS
CASE 1
\$ THOUSANDS**

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
INCOME AFTER TAX	4,461	2,938	1,564	1,223	2,486	1,590
ADD DEPRECIATION	4,332	5,480	6,560	6,864	5,310	5,576
ADD INTANG. AMORT.	2,820	2,820	2,820	1,840	0	0
TOTAL FR. OPERATIONS	11,613	11,238	10,944	9,927	7,796	7,166
SPARES PURCHASES	3,960	5,400	6,000	6,300	6,300	6,000
SURPLUS(DEFICIT)	7,653	5,838	4,944	3,627	1,496	1,166
CUMULATIVE CASH FLOW	7,653	13,491	18,435	22,062	23,558	24,724
DISCOUNT RATE:	9.75%					
PRESENT VALUE	19,667					

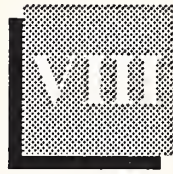
TABLE 12

**MSC
PRESENT VALUE ANALYSIS
CASE 2
\$ THOUSANDS**

	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6
Income After Tax	5,383	3,298	1,585	1,075	2,307	1,487
Add Depreciation	4,332	5,383	6,151	5,983	3,851	3,486
Add Intang. Amort.	2,820	2,820	2,820	1,840	0	0
Total FR. Operations	12,535	11,501	10,556	8,898	6,158	4,973
Spares Purchases	3,960	4,374	3,842	3,310	2,779	2,247
Surplus (Deficit)	8,575	7,127	6,714	5,588	3,379	2,726
Cumulative Cash Flow	8,575	15,702	22,416	28,004	31,383	34,109
Discount Rate:	9.75%					
Present Value:	26,343					



Recommended Valuation



Recommended Valuation

Based on the data available, three approaches were examined to help determine the valuation of the Momentum Service Corporation. These approaches are summarized as follows:

A

Prior Acquisitions

Other acquisitions during the past two years were reviewed to determine if a pattern existed. No pattern was found; however, it is clear that the value was not based on a percentage of revenue, but more likely on earnings potential.

In one case, (i.e., MAI/Basic Four), a premium was paid to reacquire a dedicated service company to support the sale of hardware products. The service company thus provides some synergy to the hardware sales effort.

In the case of Momentum, no synergy opportunity exists to enhance product sales with a dedicated service force.

Based on the above facts, INPUT has concluded that past transactions should not be used as a basis for establishing value for Momentum Service Corporation.

B

Stock Market Valuation

Of the top twenty third-party maintenance companies, only one, Interlogic Trace, is publicly traded. It is not similar to MAI/Basic Four in that it does not directly support product sales. It is very similar to Momentum Service Corporation and therefore can be used as a base for determining value.

In 1987, Interlogic Trace had a net after-tax profit of \$9.2 million (6.8%) and sold for an average price/earnings ratio of 13.6.

During the second and third quarters of fiscal year 1988, Interlogic Trace incurred very significant losses (\$5.2 million) in its investment portfolio. As a result, the net earnings for fiscal 1988 are projected to be \$3.6 million, and the market has dropped its value from \$125 million in 1987 to \$43 million today. It is currently selling at a price/earnings ratio of 12.

It is clear that the market has discounted its value due to the projected drop in earnings, which was almost entirely due to the loss in the investment portfolio. INPUT believes that for valuation purposes it would be reasonable to value Momentum Service on the basis of Interlogic Trace's 1987 P/E ratio (i.e., 13.6), which was before the portfolio loss.

Momentum's net profit in 1988 is projected to be 7.2%, which is very similar to the 6.8% net profit of Interlogic Trace in 1987.

Based on a 13.6 price/earnings ratio and the 1988 earnings projections of \$4.461 million, the value for Momentum Service is as follows:

$$13.6 \times \$4,461 = \$60,669,000$$

C

Present Value of Future Cash Flow Plus Residual Value

A six-year cash flow plan and a present value projection were prepared for both Case I and Case II. The present value results are as follows:

Case I	\$19,667,000
Case II	\$26,343,000

Case II is a "fire sale strategy," where the company is milking a declining business. Since you know in advance that the company is much smaller in six years and therefore would have a much lower residual value, this case can be discarded for evaluation purposes.

In determining the residual value at the end of six years, some projections were made regarding the future (i.e., after the sixth year). Two items are significant that INPUT believes will change from prior history. These are as follows:

1. The rate of decline of base product inventory and revenue will drop significantly. Experience with other older product lines has been that the inventory drops very fast for a few years and then levels off. This will have a positive effect on future profits.
2. The need for continuing the \$6 million per year in spare parts purchases will also drop significantly, because by that time the major cities will be stocked to support the IBM and compatible inventory. In other words, it will be possible to add new customers without an increase in inventory. INPUT believes that spare parts purchase would drop from 10% of revenue to 3.5% of revenue. This will also have a positive effect on future profits.

Momentum Service will probably also have some flexibility to raise prices in excess of its cost increases, while still keeping under the IBM price umbrella.

On the basis of the items above, INPUT believes that a 4.25% net after-tax projection is reasonable. On that basis the earnings would be \$2,581,000 for the 1994 time frame.

Using a 13.6 price/earnings ratio, the residual value would be \$35.1 million in 1994; discounted to the present it would be \$20.1 million.

The total residual value under this approach would be as follows:

Present value of cash flow	\$19,667,000
Discounted Residual Value	\$20,085,000
Total	<u>\$39,752,000</u>

D

Recommendation

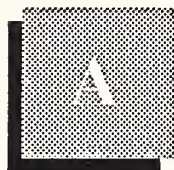
INPUT recommends a valuation of \$50,000,000, which is the midrange between the stock market valuation and the present value plus residual value approach. This is 11.2 times the projected 1988 earnings and is 81% of the projected 1988 revenue.

The valuations contained in this report represent INPUT's best efforts based upon the information available to INPUT. INPUT has relied upon the accuracy of this information in making its evaluation and has attempted to verify this information where possible and practical. INPUT does not warrant the accuracy of this information however, and inaccuracy of the information could affect the conclusions reached in this report.



Appendix: Customer Contact Questionnaire





Appendix: Customer Contact Questionnaire

INPUT is a market research and planning company that is doing a market research study for Momentum Service Corporation. Your responses will be kept confidential. This will take only five minutes or so of your time.

(If the customer would like to know who at Momentum Service Corporation is sponsoring the survey, refer them to Mr. David Baum, Director of Market Operations, 201-984-9400 or Mr. Ray Wolitz, Vice President of Marketing and Sales, 201-984-9400)

1. As a customer of Momentum Service Corporation, I would like some information that will describe your environment and your relationship with Momentum Service Corporation.

Momentum offers service on four major product categories. Which of these do you have installed?

	<u>Installed</u>	<u>Under MSC Maint. Contract</u>
Quantel Products	_____	_____
Mohawk Data Systems Products (Systems & Trivex)	_____	_____
Momentum Sys. Corp. Products (Hero)	_____	_____
IBM PC & PC Compatibles	_____	_____
IBM Sys. 34, 36 or 38, and Peripherals	_____	_____

Of the five categories installed, which categories are being serviced under an MSC maintenance agreement?

2. How long have you been an MSC customer?

- A. Less than one year _____
- B. 1-3 years _____
- C. More than three years _____

3. On a scale of 1-10 (1 = low, 10 = high), rate your satisfaction with the following:

- A. Response time _____
- B. C.E. attitude
(customer engineer, field engineer) _____
- C. Local service management _____
- D. C.E. ability to resolve problems quickly _____
- E. Availability of spare parts _____
- F. Overall satisfaction with service _____

4. What service area, if any, would you like improved or added to, that would increase your satisfaction with service?

5. Do you have any plans to cancel or reduce the amount of equipment being serviced by MSC? If so, why?

- A. System/machine being traded in or phased out _____
- B. Service Problems _____

C. Price _____

D. Other _____

6. Would you seriously consider expanding MSC maintenance to other products for which they offer service?

	Yes	No	If no, why not?
Quantel	_____	_____	_____
Mohawk	_____	_____	_____
Momentum	_____	_____	_____
IBM	_____	_____	_____

Thank you very much for your assistance in helping us analyze MSC customer attitudes. The results will be helpful to them to analyze their customer satisfaction and business opportunities.

